1. (Amended) A recombinant DNA comprising a sequence (1) coding for a polypeptide heterologous with respect to a filamentous hemagglutinin of *Bordetella* (Fha) fused in the same reading frame with a sequence (2) placed upstream from said sequence (1), said sequence (2) coding for at least a part of the precursor of the Fha, this part comprising at least the N-terminal region of a truncated mature Fha protein which contains the site of interaction of the Fha with heparin, said sequence (2), when placed under the control of a promoter recognized by the cellular polymerases of *B. pertussis* and introduced into a *B. pertussis* cell culture is expressed in this culture and excreted into the culture medium of these cells or exposed at the surface of these cells, wherein said recombinant DNA when expressed ~~produced~~ highly immunogenic fusion proteins.

7. (Thrice Amended) [Recombinant] The recombinant DNA according to claim 4, wherein the extension of the sequence (2) towards its C-terminus will not [to] exceed the length which would cause the transformation of *B. pertussis* with this recombinant DNA then placed under the control of a promoter capable of being recognized by *B. pertussis* to on longer permit the direct excretion of the recombinant protein then formed into the culture medium of this *B. pertussis*.

Cancel claims 23-25 without prejudice.

Amend the claims as follows.

30. (Amended) A recombinant DNA encoding a recombinant immunogenic polypeptide, wherein said recombinant DNA comprises a sequence (1) coding for an antigenic polypeptide or peptide fused in the same reading frame with a sequence (2) placed upstream from said sequence (1), said sequence (2) coding for at least a N-terminal region of the precursor of the Fha which contains the site of interaction of the Fha with heparin, said sequence (2) allowing the recombinant polypeptide, when said recombinant DNA is expressed in a *B. pertussis* cell culture, to be secreted into the culture medium or exposed at the cell surface.

31. (Amended) [A] The recombinant DNA according to claim 30 or 34, wherein said sequence (1) codes for an antigenic polypeptide or peptide of a pathogenic agent.

Cancel claims 32 and 33 without prejudice.

Add the following new claims.

--34. A recombinant DNA comprising a sequence (1) coding for a polypeptide heterologous with respect to a filamentous

hemagglutinin of *Bordetella* (Fha) fused in the same reading frame with a sequence (2) placed upstream from said sequence (1), said sequence (2) coding for at least a part of the precursor of the Fha, this part comprising at least the N-terminal region of a truncated mature Fha protein which contains the site of interaction of the Fha with heparin, said sequence (2), when placed under the control of a promoter recognized by the cellular polymerases of *B. pertussis* and introduced into a *B. pertussis* cell culture is expressed in this culture and excreted into the culture medium of these cells or exposed at the surface of these cells, the resulting fusion protein being able to facilitate the presentation of the antigen encoded by the heterologous sequence (1) to the mucosal immune system.

D4 cont'd

35. A vaccine composition for stimulating mucosal immunity comprising the cell culture according to claim 22.

36. A vaccine composition for stimulating mucosal immunity comprising a recombinant protein encoded by the recombinant DNA of claim 1.

37. A method for stimulating mucosal immunity, comprising nasal administration to a subject in need thereof of a composition comprising the cell culture according to claim 22.